FREEDOM TO FAIL: THE IMPACT OF GIVING ACCOUNTING STUDENTS THE CHANCE TO FAIL AT QUESTIONS

Danielle McWall and Tony Wall
Ulster University

ABSTRACT

Prior research demonstrates that student learning can be enhanced through self-guided reflection. In particular, promoting students' metacognition and self-efficacy beliefs requires educators to provide students with opportunities to 'be confused', ask questions of themselves and build the resilience fundamental to their future professional lives. However, students cannot be expected to learn to learn; they must be taught how to learn. Additionally, they need to be assisted in identifying what learning strategies are available to them. Having outlined the rationale behind strategies such as student-led learning and student-driven assessment, this paper presents an analysis of student reflections, module evaluations and exam marks, and a comparison of final exam marks before and after a method known as freedom to fail (F2F) was introduced. It was found that the introduction of this approach led to a greater student awareness of learning strategies and improved results.

Keywords: *audit education; assessment; freedom to fail; metacognition; student-led learning; reflection*

INTRODUCTION

Student-led learning and student-driven assessment are still relatively new in professional subject teaching areas such as law and accounting (Murdoch, 2015). Research studies have identified that students tend to focus on getting the right answer (Tanner, 2012) and fixate on the grade to the detriment of feedback

(Rowntree, 1987). This would appear to be the case in professionally exempt modules, in that the students' aim is to get to the level required for professional exam exemption rather than engaging in the learning process and the subject material itself. Flood and Wilson (2008) found that students studying professional accounting examinations in Ireland engaged predominantly in learning activities that led to examination success. These learning approaches have been found to be detrimental to students' future learning, as their knowledge of the subject area is superficial in nature (Thomas, Martin and Pleasants, 2011).

Wanner and Palmer (2018) ascertained that while there is growing evidence to support the benefits of formative assessment through both peer and self-assessment methods, these are not the norm at universities. Moreover, JISC (formerly the Joint Information Systems Committee) identify that peer assessment is often difficult to implement successfully, due in part to students' lack of confidence in their own and their peers' ability to undertake grading (JISC, 2015). Other difficulties include a lack of time spent in class enabling students to fully read and comprehend the suggested solution and marking scheme, and, more worryingly, a failure to lead the learning process. Students cannot be expected to learn to learn; they must be taught how to learn (Gall, Gall, Jacobsen and Bullock, 1990). It also helps if they are assisted in identifying what learning strategies are available to them, including reflection (Dewey, 1933) and student metacognition (Flavell, 1979; Tanner, 2012). Metacognition in the process of learning was accredited to John Flavell and is defined in the simplest terms as thinking about your own thinking. The root 'meta' means 'beyond', so the term refers to 'beyond thinking' and encompasses the processes of planning, tracking and assessing one's own understanding or performance (Madeline, 2017). Flavell's (1979) work on metacognition and cognitive monitoring describes metacognition as 'one's knowledge concerning one's own cognitive processes or anything related to them' (p. 232). Boud and Associates (2010) believed that if students were to become independent and self-managing learners they needed to be supported in the development and acquisition of the skills necessary for learning, including those of assessment.

In 2015, concern was expressed by Chartered Accountants Ireland (2015) that students were almost afraid to tackle a complex situation in case they got it wrong. This mimicked a trend evidenced by the researchers in audit classes in an Irish university when quantitative examples were included and students hesitated to engage with their calculators and had to be reminded to use them. When asked, students said they preferred the lecturer to explain how to do the question rather than trying it themselves. This supports the conclusions reached in the study of accounting students by Byrne and Flood (2011), who found that over 60 per cent of students favoured reproductive learning concepts rather than deeper approaches or higher order learning concepts. To address concerns about this worrying trend, which is negatively impacting future learning for professional education, the freedom to fail method was introduced in a number of audit modules at an Irish university.

Accordingly, the aim of this paper is to test the impact of this method by assessing whether student engagement and learning have been improved through a mixture of self-assessment and self-reflection. The method promotes student metacognition (Tanner, 2012), and therefore should provide a better understanding of

exam technique and what is needed to pass exams rather than just remembering what is taught (Boud, 1995; Biggs, 2003; Byrne and Flood, 2011; Scott, 2015). Ideally, the promotion of metacognition through self-assessment and reflection should ultimately lead to an improvement in both short-term outcomes, via better module results, and long-term outcomes through better self-regulation and improved student ability to monitor and direct learning progress (Perkins and Salomon, 1989).

The paper is organised as follows. In the next section, a brief review of the literature related to different methods of assessment and learning is undertaken. The following section outlines the methodology. The results of a comparison of exam results before and after the new method was introduced, as well as an overview of student comments, are then presented and implications are discussed. In the final section, conclusions are drawn, limitations of the research are outlined and recommendations for future research are provided.

LITERATURE REVIEW

The following review of the relevant literature examines student-led assessment and assessment for future learning. The importance of metacognition and reflection, and the concept of freedom to fail (F2F) and how it can build resilience are then described. An F2F assessment method was introduced into three modules in an Irish university, and this paper examines its effectiveness.

Student-Led Assessment

Boud (1995) promoted self-assessment as a method of student-led assessment, and this was further developed by Taras (2015), who focused on an integrated student self-assessment model. Taras (2015) suggests that one way to adopt this model is to exclude the grade. It would appear that student-led assessment in terms of self- and peer assessment is very much dependent on the individual academic (Adachi, Hong-Meng and Dawson, 2018); however, Boud and Associates (2010, p. 2) stress the importance of students and teachers becoming 'responsible partners in learning and assessment'. Ndoye (2017) ascertained that students perceive self- and peer assessment as a valuable contribution to their learning when coupled with effective feedback and a supportive learning environment. Murdoch (2015) used self- and peer assessment as methods of student-led and student-driven assessment by giving groups of students responsibility for their learning through replicating a professional legal workplace. Boud and Associates (2010) also stress that there should be sufficient dialogue with students about assessment processes. Thomas et al. (2011) concluded in their study of self- and peer assessment in higher education that lecturers need to be prepared to spend sufficient time discussing the assessment method and rationale behind it with their students.

Biggs (2003, p.141) emphasises the importance of self- or formative assessment 'to know how learning is proceeding' and to identify what to do to overcome a mistake; this links suitably with the metacognitive processes described below. The traditional assessment of question practice followed by a lecturer's review of the solution doesn't lend itself well to learning by doing (Dewey, 1933), to Biggs and

Tang's (2011) view of constructive alignment, or to the development of graduate attributes/outcomes that are required of a twenty-first-century student (Binkley, Erstad, Herman, Raizen, Ripley, Miller-Ricci and Rumble, 2013; Hämäläinen, Kiili and Smith, 2016; Alshare and Sewailem, 2018). These views uphold the sentiments of Boud and Associates (2010) in their vision for assessment in the year 2020, as they believed students needed to develop the capacity to make judgements about both their own and others' work in order to enhance their continuing learning and professional development. However, many students reject deeper approaches to learning on the grounds that the assessment methods in their courses involve so much reproduction of material that developing deeper approaches is not worth the investment required (Brown, Bull and Pendlebury, 1997; Byrne and Flood, 2011). Furthermore, much of the literature on learning shows that undergraduate courses with a heavy load of subject content are more likely to foster surface learning methods (Ulster University, 2017).

Assessment for Future Learning

In designing assessment for future learning, those working in higher education are being asked to review the aims of assessment so that students may develop skills and competencies for their future personal and professional life (Gijbels, Donche, Richardson and Vermunt, 2014). The literature surrounding assessment for future learning would suggest that students need to be actively involved in the assessment process (Miller, Irmie and Cox, 2014) and develop as independent learners to be successful in both their current programme of study and in their future careers (Boud and Falchikov, 2007). This is particularly true for accounting students, many of whom are highly focused on their future professional careers. Biggs and Tang (2011) suggest graduate outcomes such as professional skills and lifelong learning are embedded outcomes. This can be difficult to achieve with a predominantly exams-based assessment approach. Ingram and Howard (1998) examined course objectives and grading methods in introductory accounting courses and ascertained that exams were not measuring the achievement of modular learning objectives. Formative assessment can be used to help; however, Slack, Loughran and Abrahams (2014) found that unless the student perceives some reward, engagement and satisfaction remains low. In Murdoch's 2015 study, students reported that this type of learning and assessment style, i.e. peer and self-assessment plus reflection, remained with them well into their careers, hence developing lifelong learning skills and the ability to take responsibility for their own learning.

Biggs and Tang (2011) also argue that the ability to make judgements about whether performance meets a given criteria is vital for effective professional action in any field, and Tan (2007) argued for self-assessment practices which develop and sustain a student's self-assessment ability beyond the immediate programme of study. Thomas et al. (2011) looked specifically at enhancing students' future learning in higher education through three self- and peer assessed projects. The authors wanted to encourage academics to find ways to use constructive alignment, not only for the subject at hand but also for looking at ways the assessment and intended learning outcomes align with the 'contexts their students may work in upon graduation' (Thomas et al., 2011, p. 15). One way that students' current and indeed future

learning can be developed and enhanced is through embedding reflective processes and metacognition into their current programme of study.

Metacognition and Reflection

Research shows that student learning can be enhanced considerably through self-guided reflection (Boud, Keogh and Walker, 1985; Moon, 1999; Debowski, 2012). Biggs and Tang (2011) defined good teaching as that which helps students take control of their learning. They explain that many teaching practices assist in this process, from peer teaching to training students to use metacognitive learning strategies. Students taking control of their learning is what lifelong learning and metacognition is about. Albert Einstein is quoted as saying that 'the value of an education is not the learning of many facts but the training of the mind to think …' (Frank, 1947, p. 185). Moreover, Hattie (2009) believes that if students can become their own teachers, they will be able to demonstrate those self-regulatory attributes that appear to be the most important for learners. These include self-monitoring, self-evaluation, self-assessment and self-teaching. In 1933, Dewey stated that we learn more from reflecting on our experiences than from the actual experiences themselves; he asserted that reflection on an experience is the key step in learning. Clarke, Arnab, Morini and Heywood (2018, p. 872) found that 'self-reflection allows students to develop their metacognition skills and work towards a practice that encourages continuous learning.'

Knight and Yorke (2004), in their USEM model of employability, propose four inter-related components of employability: understanding; skilful practices; efficacy beliefs; and metacognition. The latter two are important concepts for this paper: with the former reflecting the learner's notion of self-belief, and the possibility for self-improvement and development; and metacognition embracing self-awareness, how to learn and reflection (Cole and Tibby, 2013). Taking the USEM concept further to be more usable for students, Dacre Pool and Sewell (2007) developed a Career-EDGE model of graduate employability, whereby metacognition is replaced with 'emotional intelligence' and self-efficacy and reflection remain core. Byrne, Flood and Griffin (2014) found that 40 per cent of first-year accounting students did not have the confidence or self-efficacy to respond to tutorial questions in class, with 40 per cent unable to judge what was needed to do well in examinations. Root Kustritz and Clarkson's 2017 pilot study using exam wrappers (short questionnaires to coach the student in thinking through the steps of metacognition) discovered that there was no demonstrable impact on students' exam behaviour and subsequent results whether a wrapper was used or not; they concluded that this was likely due to the student's lack of training in or understanding of metacognition.

Research on metacognition within the social science disciplines has studied techniques and strategies for teaching (Schraw, Crippen and Hartley, 2006; Zohar and David, 2009). Tanner (2012) specifically looked at promoting student metacognition in biology courses through strategies such as: examining current thinking; giving students practice in identifying confusions; pushing students to recognise conceptual change; and use of reflective journals to provide a forum whereby students can monitor their own thinking. The development of the concept of giving students the freedom to be confused, ask questions of themselves, and thus build a resilience that is very attractive to future employers, will now be discussed.

Freedom to Fail and Building Resilience

In 2015, Miller highlighted the importance of establishing a culture that embraces F2F. He felt such an approach would help students to adopt a growth mind-set, take risks in order to enhance learning, and develop realistic expectations of what it takes to succeed generally. He further promoted the idea of failing forward, a concept developed by Maxwell in 2000; failing forward is to fail and learn from it, take the positives and build resilience. Accordingly, when students are given the F2F it can improve their resilience since they are learning from their mistakes, and through this process developing learning strategies to aid improvement.

Resilience is a key skill that professional bodies and employers alike wish to see developed in higher education, because it is so important to those working in professional services (Institute of Chartered Accountants in England and Wales, 2018a). Chartered Accountants Ireland (CAI) (2019) identify not only curiosity and analytical and critical thinking as vital future skills, but also emotional intelligence and resilience as the skills required for career success, now and in the future. The Association of Certified Chartered Accountants (ACCA) in its 2018 report, 'Learning for the Future', identified that accountancy professionals will need to take ownership of their personal development if they are to succeed in an ever-changing dynamic world. Resilience is key as career paths are no longer linear and professionals are at risk if they are not open to change, flexible and resilient. To adequately prepare for a professional career, students need to develop their critical analysis and cognitive flexibility; therefore, enabling them to fail in a safe arena, such as a classroom, helps to develop their ability to critique and develop resilience and a positive attitude towards life-long learning.

Research on resilience has grown rapidly within the psychological arena, and the term 'resilience' has been used to refer to good, stable and consistent adaption under challenging conditions (Jowkar, Kojuri, Kohoulat and Hayat, 2014). Wang, Haertel and Walberg (1998) identified that teaching students strategies for learning builds resilience and this links well with promoting student metacognition as discussed above. Wang et al. (1998) also note that resilience cannot simply be created by a set of activities or strategies, but can be enhanced by teachers who begin to view students as individuals who can make choices as well as acquire knowledge and skills.

This paper investigates the impact of taking the values of student-led assessment through self-assessment and assessment for future learning by embedding both quantitative techniques (trend analysis) and metacognition through reflection. The methodology used in the paper is now outlined.

METHODOLOGY

Research Context

Three auditing modules were chosen for the study across three different programmes. The modules chosen are typical of many in an accounting programme, both in Ireland and internationally. They have a high subject content dictated by professional body exemptions and tend to have a propensity towards exam-based

assessment. The modules all avail of exemptions from professional accountancy examinations, namely ACCA and CAI, but also the Institute of Chartered Accountants in England and Wales (ICAEW). For some of these professional bodies, a 75 per cent exam-based assessment is required to achieve exemptions.

The three modules in the study comprised a final year undergraduate module (UG), Audit and Assurance; a graduate diploma module (GD), Audit and Assurance; and a masters' level module (MSc), Auditing and Professional Ethics. The modules were analysed across two consecutive years following a change in assessment method that introduced F2F (see Table 2). GD students are those who wish to pursue a career in accounting but have not studied the subject at undergraduate level. Some students exit at this level, whilst others progress to the MSc having completed one year of study. It should be noted that while the module title and audit content is different for the MSc, the ethics content is equivalent across all three modules.

It had been ascertained in the Irish university that prior to this change in assessment method, the quality of the solutions to seminar questions was generally poor and while collating solutions for an assessed portfolio ensured regular attendance, a high degree of plagiarism was evident among students and with reference to solutions to similar questions found elsewhere. Many solutions appeared rushed, with no consideration of question requirement or answer structure. This lack of consideration continued into other assessed elements such as a class test and the final exam, impacting negatively on module marks and leaving students disappointed. Students identified that marks achieved did not reflect their efforts and when this was discussed further they acknowledged that they did not pay due regard to seminar questions and solutions since these were worth only 5 per cent of the module. Other skills that would be expected of accountants, such as numeracy and data analysis, were also identified by a professional accountancy body in Ireland as lacking in graduates from university programmes (Chartered Accountants Ireland, 2015). Indeed, at their 2015 examiners' and educators' conference, the CAI commented that some students could not even calculate percentages accurately. As a result, the F2F initiative was introduced in an attempt to address the above issues.

The Freedom to Fail Initiative

This study developed Tanner's 2012 study of metacognition in biology students and adopted the F2F method as an assessment strategy to give students practice at examining current thinking, identifying confusions, monitoring thinking and developing resilience. The change of assessment method to a F2F method involved three different student cohorts regularly (five to six times in a twelve-week semester) completing an exam-type question to the best of their ability; after a number of days, the solution and marking scheme were released. The students self-assessed their work, marking it according to the solution and marking criteria, totalling the marks for each section and providing an overall mark and percentage. The marks for this assessment were not based on actual answer marks, thereby allowing students to make mistakes but get rewarded for technique and self-reflection. The students were rewarded for doing the work themselves (helping to reduce the problems with plagiarism in the past), answering all parts of the question (avoiding rushed answers), considering

the requirement verbs (aiding structure and exam technique), correct formatting and layout, quality of work, quality of self-assessment and quality of reflection; however, there were no marks for getting the answer correct.

Following the aforementioned comments from Chartered Accountants Ireland (2015), the calculation of percentages and trends was embedded into the assessment, becoming a natural process for the student and therefore leading to an enhancement for future learning. The students also had to reflect on the result, identifying how to improve their answering technique. Moreover, they had to reflect on what was done well, in addition to what could be improved, plus conclude on what they personally had to do to improve marks in audit questions for the next submission and for the final exam and/or class test. By requiring the student to review whether work was improving week by week and producing a trend analysis in their final reflection piece, the assessment applied audit theory to a practical exercise, developing metacognitive skills plus the numerical and analytical skills that are both required and expected of accountants by the professional accounting bodies and employers (Association of Certified Chartered Accountants, 2018; Chartered Accountants Ireland, 2019; Graduate Prospects Limited, 2017; PwC, 2017; Institute of Chartered Accountants in England and Wales, 2018b) and also developing skills for future learning.

Following each self-assessed piece of work and as part of the moderation process, the lecturer collected the marked solutions and reflections, and assessed them against the criteria communicated to the students at the start of the process and in the module handbook. A template was produced for this process, see Appendix I, which ensured consistency of approach and provided a framework for feedback in line with the view that such feedback should be used to actively improve student learning (Boud and Associates, 2010; Boud and Molloy, 2012). Students were provided with written feedback on their homework and marking template sheets the following week to gauge the accuracy and appropriateness of their own marking and reflections.

For the modules analysed in this paper, reflection was built into the assessment process and described to students as moderated self-assessment. Pre-requisites for this approach include good communication at the outset, sufficient time to accomplish the work and guidance. To ensure students are prepared for the end-of-semester exam and are utilising the knowledge base from the subject area to succeed in professional exams post-university, coursework traditionally revolved around a class-test type assignment, leaving little or no room for originality or innovation in assessment. Because the 75 per cent exam-based assessment had to remain for professional exemption purposes, the change in assessment method needed to occur within the 25 per cent coursework element. For the undergraduate and graduate diploma students to perform to their potential in the final exam, they required the experience from a class test in advance; therefore, this element also remained within the coursework. The masters' level students had previous experience of audit exams so did not require a class test; however, they did need to complete a project to achieve the relevant research component for the module. This left only the seminar question coursework element open to adaptability. Table 1 shows where the F2F change in assessment method occurred.

TABLE 1: COMPARISON OF ASSESSMENT BEFORE AND AFTER THE INTRODUCTION OF F2F

Assessment Method	Element	Before	After
Final exam	Exam	75%	75%
Class test (UG and GD) / Project (UG/MSc)	Coursework	20%	20%
Portfolio of solutions to seminar questions	Coursework	5%	–
F2F	**Coursework**	**–**	**5%**

Data Collection and Analysis Process

A qualitative interpretative research method was used, and data was analysed from the students' examination results, module evaluations, student reflections and end-of-process reflection. The end-of-semester examination results for all students in the research sample were analysed by the module coordinator. Prior to the analysis, the examination results were second-marked and moderated by another module coordinator in line with the Irish university's moderation policy, in that all scripts >70% and <40% (<50% for postgraduate modules) are second-marked along with a sample from each other band thereafter. The examination scripts were also moderated by an external examiner.

Anonymous module evaluations (a student feedback survey) from all students are requested during each semester as part of the Irish university's quality assurance initiatives. The student feedback surveys relating to the three modules in the study were also collated and analysed by the module coordinator with regard to the following qualitative questions:

'What did you feel was particularly good about this module?'

'Please suggest any improvements that you feel could be made to this module.'

Regular reflections and an end-of-process reflection were built into the F2F initiative as part of the assessment process. Students were aware that the F2F initiative was part of a research project; however they were not intrinsically aware that the reflections would be analysed for this study, since the reflections dealt with student metacognition and learning strategies rather than the F2F process. The module coordinator analysed the reflective commentaries for any comments related to the F2F approach as part of this qualitative interpretative methodology.

Research Sample

Three auditing modules were analysed before and after the F2F method was introduced (see Table 2), spanning two consecutive years and thereby providing data from six different student cohorts. 174 students in total were involved in the analysis: 46 at MSc level; 31 at GD level; and 97 at UG level.

TABLE 2: THE MODULES AND NUMBER OF STUDENTS

Module	Number of Students
UG	97
GD	31
MSc	46
Total	**174**

It should be noted that ten students (nine UG and one GD) included in the second MSc iteration had previously been involved in the F2F assessment method in the first iteration for their initial programme of study and as such 36 per cent of this cohort had experience of the F2F method of assessment prior to undertaking the MSc.

One potential problem with assessing changes in module marks following the introduction of a new approach is that any increase in marks may be due to the cohort in question being stronger than those it is being compared with. Table 3 depicts the academic background of the relevant cohorts.

TABLE 3: ACADEMIC BACKGROUND FOR STUDENT COHORTS

Programme	Measure	2014/15	2015/16	2016/17 F2F method used	2017/18 F2F method used
UG	Entry points	337	349	359	356
GD	Undergraduate programme	7% MSc 53% BSc 40% BA	7% MA 43% BSc 43% BA 7% LLB	5% MA 5% MSc 40% BSc 35% BA 10% LLB 5% BEng	8% MSc 8% BSc 60% BA 8% LLB 8% BEng 8% BMusic
		7% 1st 53% 2:i 40% 2:ii	7% 1st 64% 2:i 29% 2:ii	5% 1st 60% 2:i 35% 2:ii	25% 1st 50% 2:i 25% 2:ii
MSc	Undergraduate programme	94% BSc 6% GD	90% BSc 10% GD	100% BSc	97% BSc 3% GD
		23% 1st 68% 2:i 9% 2:ii	20% 1st 70% 2:i 10% 2:ii	33% 1st 56% 2:i 11% 2:ii	18% 1st 79% 2:i 3% 2:ii

It can be seen from this table that admissions and entry criteria for the UG and MSc programmes remained reasonably steady across the years reviewed; for example, the UG programme had a 3.6 per cent increase in entry points (awarded for students' achievements in secondary education) from 2014/15 to 2015/16, a 2.9 per cent increase from 2015/16 to 2016/17, and thereafter remained reasonably constant. The difference in intake quality could have been one of the causes for the study's results in the GD, since each student cohort has differing academic backgrounds; however, a detailed analysis of the module averages would indicate that it is more likely to be the introduction of a new method that improved results rather than a stronger student cohort for a particular year. The findings of this research are now discussed.

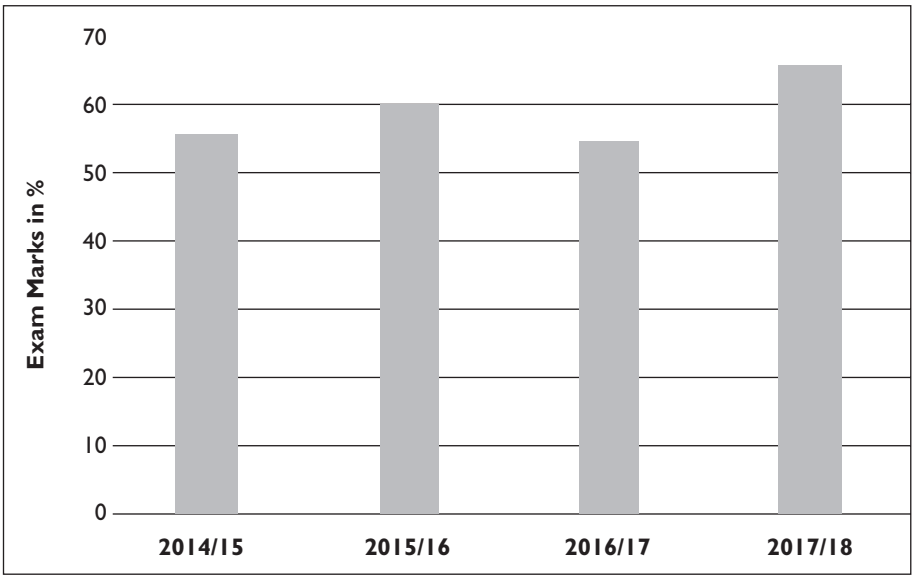
FINDINGS

The findings reveal a significant improvement in examination results across all the relevant modules from 2016/17, when the F2F method was introduced, to 2017/18. The individual modules analysed in this paper are now examined in more detail.

Undergraduate

For the UG module Audit and Assurance, the average class test marks in 2016/17 (when compared to the previous year) improved from 51 per cent to 61 per cent, an improvement of 19.6 per cent. However this was not fully sustained into the end-of-semester exam when the average fell to 55 per cent, which was lower than the 60 per cent average in the module before the assessment changes were made. This might have been due in part to the cessation of self-marking and reflection after the class test. In 2017/18, the process of self-marking and reflection was sustained throughout the module term and did not cease after the class test. It is interesting to note from Figure 1, which provides the examination results for the Audit and Assurance module, that this module suffered a decline in average marks in 2016/17, even though this year group had the highest entry points (see Table 3). However, the results for all the modules taken in 2016/17 were lower than those for the other years analysed in the paper. In 2017/18, the F2F process covered all twelve weeks of the semester and the average exam results improved from 55 per cent to 66 per cent, an improvement of 20 per cent.

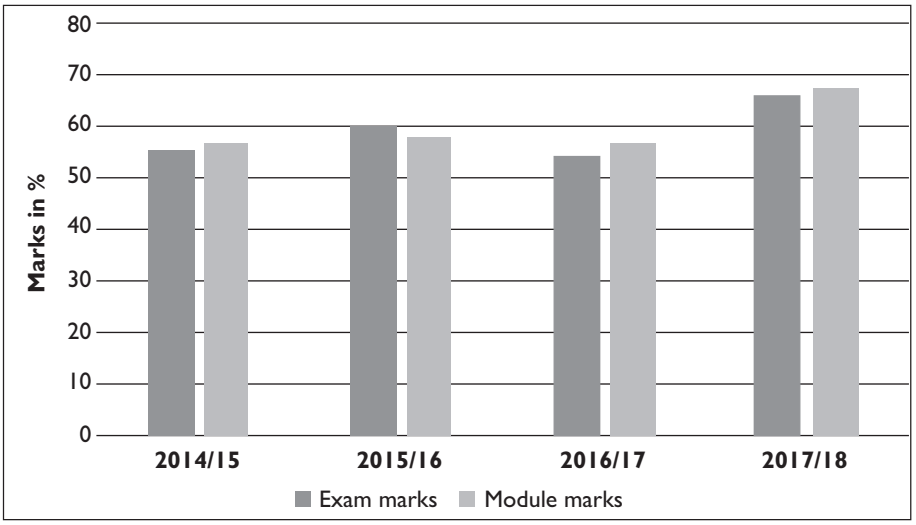
FIGURE 1: FINAL EXAM RESULTS FOR UG AUDIT AND ASSURANCE MODULE



The increase in results from 2014/15 to 2015/16 could be somewhat attributed to a slightly stronger student cohort for the latter year, with a 3.6 per cent increase in average entry points (see Table 3); however, a change in assessment method was also introduced in 2015/16 to include a class test element into the coursework for the first time. This was initiated in a bid to prepare students for exams and had an impact on the examination results as shown in Figure 1; these increased by 7 per cent from an average of 56 per cent to 60 per cent. There is a close relationship between the examination marks for the module and the overall module marks, due to the 75 per cent weighting for the exam, as shown in Figure 2. This suggests that

even though the change in the assessment method only related to the smaller 5 per cent coursework element, it had a significant impact on the actual exam results and therefore on the overall module results.

FIGURE 2: EXAM MARKS COMPARED WITH OVERALL MODULE MARKS FOR THE UG AUDIT AND ASSURANCE MODULE



When the average exam marks for the module using the F2F method are compared to other modules across the semester, the results show that this module had the biggest improvement in exam marks across the four years analysed in this paper, with a standard deviation of 4.99 compared with 2.65 and 3.11 for modules 1 and 2 respectively (see Figure 3).

Comments from undergraduate students' module evaluations highlight that the introduction of the F2F approach was viewed positively:

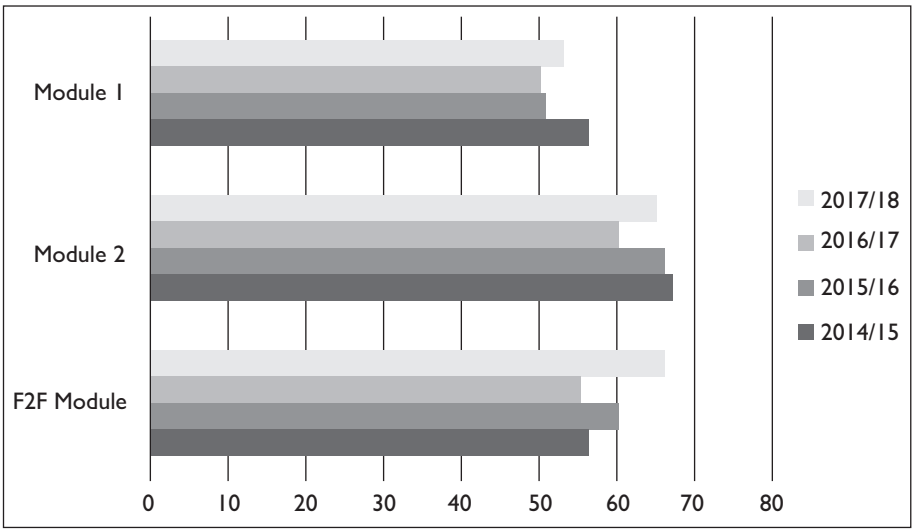
> 'The format of the hand-in questions, marking them ourselves and writing a reflection made them more interesting than simply writing out answers.'

> 'I felt the questions where we had to hand in and self-assess were particularly good. Looking back over our work and marking it ourselves helped to see where we were going wrong and where we could improve.'

> 'Hand-in questions kept me engaged throughout the semester.'

It is clear from the above comments that the questions that had to be handed in and self-assessed were not only interesting and kept the students engaged, but also acted as a guide to improvement, metacognition and self-efficacy, which were key aims of the change of assessment method.

FIGURE 3: COMPARISON OF EXAM MARKS FOR UG AUDIT AND ASSURANCE MODULE WITH OTHER MODULES TAUGHT IN THE SAME SEMESTER



Graduate Diploma

For the GD course, the students in 2016/17 had not performed well in their semester one modules and achieved lower than average marks when compared with other cohorts. From Table 3, it can be seen that this cohort had the greatest variety regarding their academic backgrounds across the four years and had the highest percentage (35 per cent) of 2:ii students. Table 4 identifies the average semester one module marks for this cohort compared with other years.

TABLE 4: AVERAGE SEMESTER ONE MODULE MARKS FOR THE GD

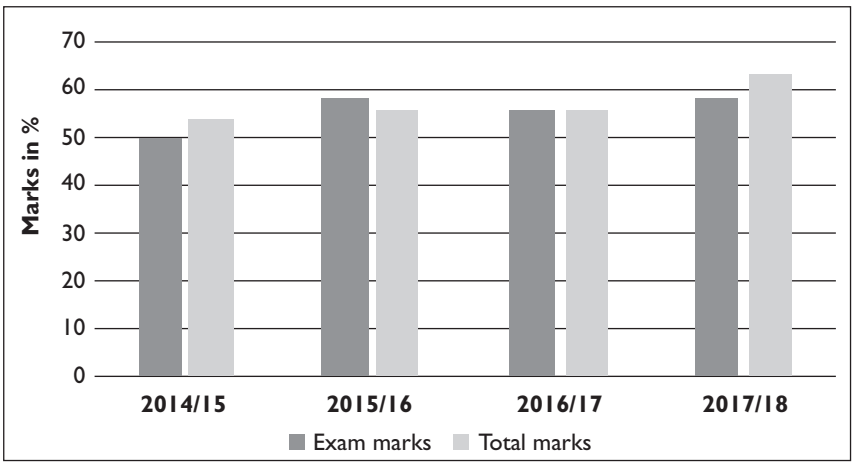
	2014/15	2015/16	2016/17	2017/18
Average module marks in semester one modules	61%	62%	56%	64%

Whilst it cannot be stated definitively that the F2F method for a semester two module (Audit and Assurance) led to all students passing the exam, it is reasonable to assume it has some impact. This is because it was the only module in the whole programme that all students passed and had the highest exam mark across all semester two modules in 2017/18.

Figure 4 highlights the results for the GD module. The F2F method of assessment was introduced in 2016/17 and had similar results to the UG module above, i.e. the results were not better than those before the changes were made. However, it was a weaker cohort and this module had the highest average mark for semester two modules, with an exam mark of 56 per cent. Once the method was extended for the full twelve-week semester in 2017/18, a further improvement in results was evident and resulted in the module achieving the highest average marks across all semester two modules. This is significant, as the audit module prior to the F2F method of assessment was ranked seventh out of the programme's ten modules (based on

module marks), rising to fourth place in 2016/17 and 2017/18. In 2017/18, the average exam mark for the module rose from 56 per cent to 58 per cent; this represents an increase of 3.6 per cent from 2016/17 and 16 per cent from 2014/15. The overall module mark also increased to 62 per cent, which was the highest mark achieved for this module across all the years analysed, and the highest module mark for all semester two modules in 2017/18.

FIGURE 4: FINAL EXAM RESULTS AND OVERALL MODULE RESULTS FOR THE GD AUDIT AND ASSURANCE MODULE



When the module average exam marks using the F2F method are compared to all modules across the same semester, the results (see Figure 5) show that the module using this method had a significant improvement in exam marks across the four years analysed in this paper.

As with the UG module evaluations, comments from the GD students about the introduction of the F2F method were generally positive.

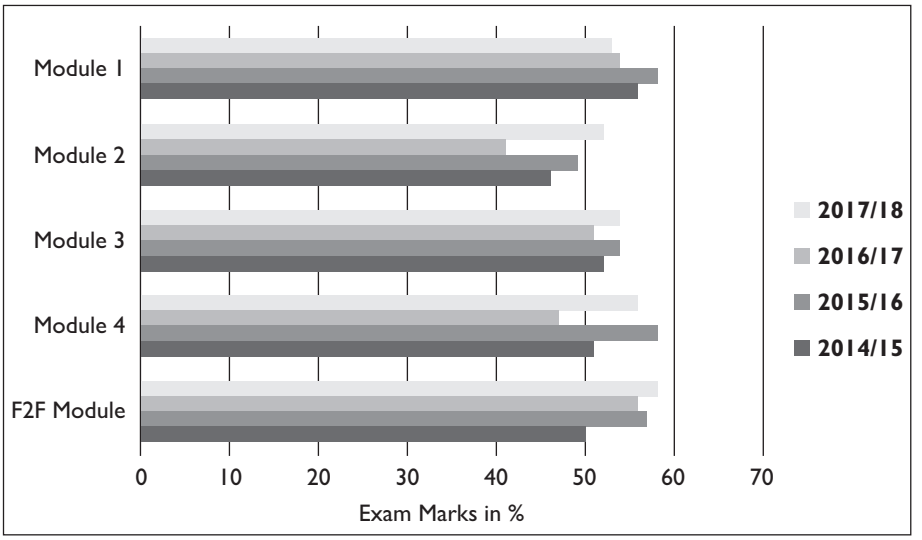
> 'More lecturers could in my mind adapt such a positive way of teaching students … has greatly helped me in my preparation for the class test and forthcoming exam.'

> 'Despite it being difficult I found it extremely beneficial as it forced you in a way to revise the topic and unlike most subjects where you have to hand in questions … this was a way for you to really understand the solution and hopefully it will stick in your mind better.'

> 'Undertaking a reflection on each piece of work I completed was quite useful as it gave me a good idea of what I need to focus on for my exam.'

From the comments above, despite the challenges presented by the change of assessment method, the GD students believed that it would be of benefit for future exams, as they had a greater understanding of how the solutions were derived.

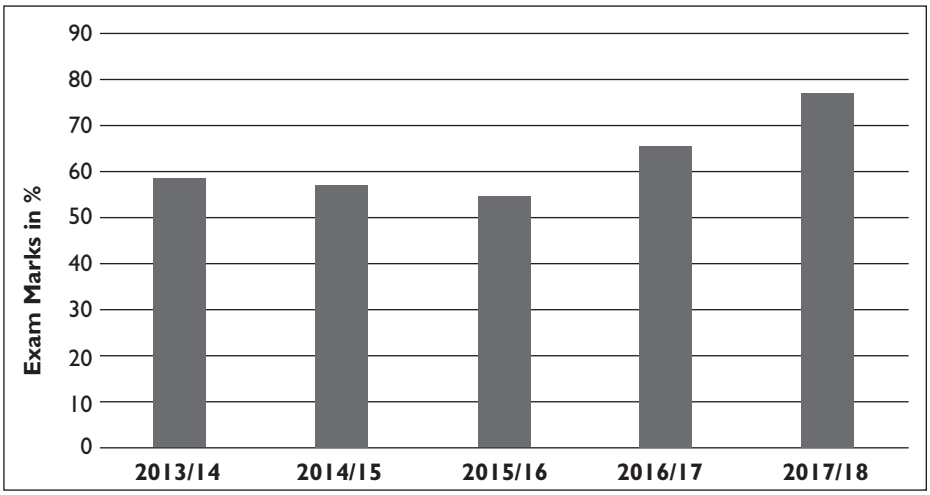
FIGURE 5: COMPARISON OF EXAM MARKS FOR THE GD AUDIT AND ASSURANCE MODULE WITH OTHER MODULES TAUGHT IN THE SAME SEMESTER



Masters

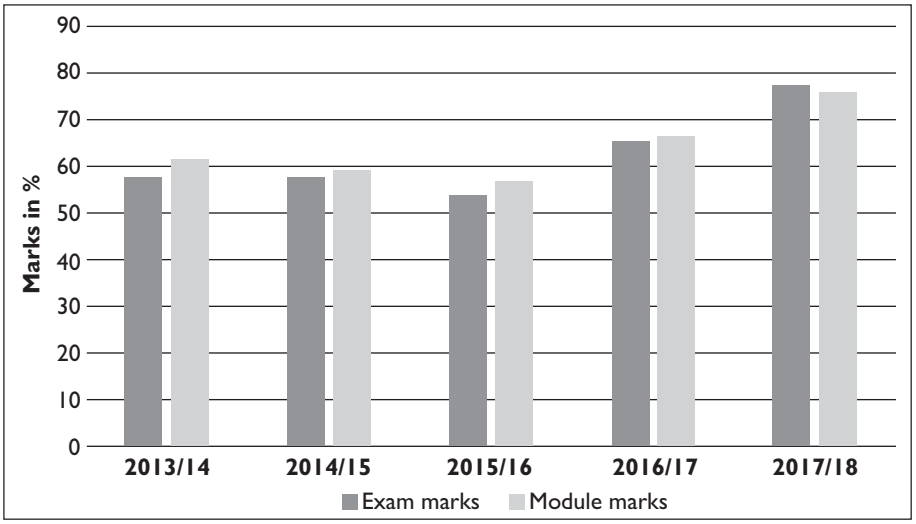
For the MSc module, Auditing and Professional Ethics, in 2015/16 one-third of students (nine out of twenty-seven) failed the exam. In the first year using the F2F method, 2016/17, all but one student passed the exam and the average marks were 65 per cent compared with 54 per cent in 2015/16, an improvement of 20.4 per cent. In 2017/18, the results were even more impressive, with exam results averaging 77 per cent and average module results of 76 per cent. It is also noteworthy that in 2017/18, the students fared better in the exam than the coursework for the first time ever in this module. Ten of the students in 2017/18 (36 per cent) had previously undertaken either the UG or GD audit module, and as such had been introduced to the change of assessment in 2016/17. On further analysis, the students in 2017/18 who had undertaken a F2F method of assessment in their previous years of study averaged 6 per cent more exam marks than those students who had not undertaken this method of assessment before. This could explain why the method was more successful at this level and highlights the metacognitive skills these students brought into their further study. Additionally, the method was used across the whole semester from 2016/17 onwards, rather than for half of the semester in the first iteration of the method, as was the situation for the GD and UG modules. At MSc level, the students are also more mature and able to better reflect on their learning. This was evident from the quality of their reflective reports. Figure 6 illustrates the exam marks over the five years from 2013/14, with the F2F method being introduced in 2016/17. It should be noted that there are five years of data available for analysis for the MSc, but only four years for the UG and GD as they were extensively revised in 2014/15.

FIGURE 6: FINAL EXAM RESULTS FOR THE MSC AUDITING AND PROFESSIONAL ETHICS MODULE



Once again, the impact of improved exam marks on the overall module marks is significant, due to the 75 per cent weighting. For this cohort, the overall module mark improved by 15.8 per cent, from 57 per cent to 66 per cent, in 2016/17, and by 33 per cent, from 57 per cent to 76 per cent, in 2017/18 (see Figure 7). The number of students who gain an award with distinction (70 per cent or over) in this module also increased considerably; for example, only 7 per cent of the cohort achieved this standard in 2015/16, but such awards increased to 39 per cent in 2016/17 and 46 per cent in 2017/18.

FIGURE 7: EXAM MARKS COMPARED WITH OVERALL MODULE MARKS FOR THE MSC AUDITING AND PROFESSIONAL ETHICS MODULE



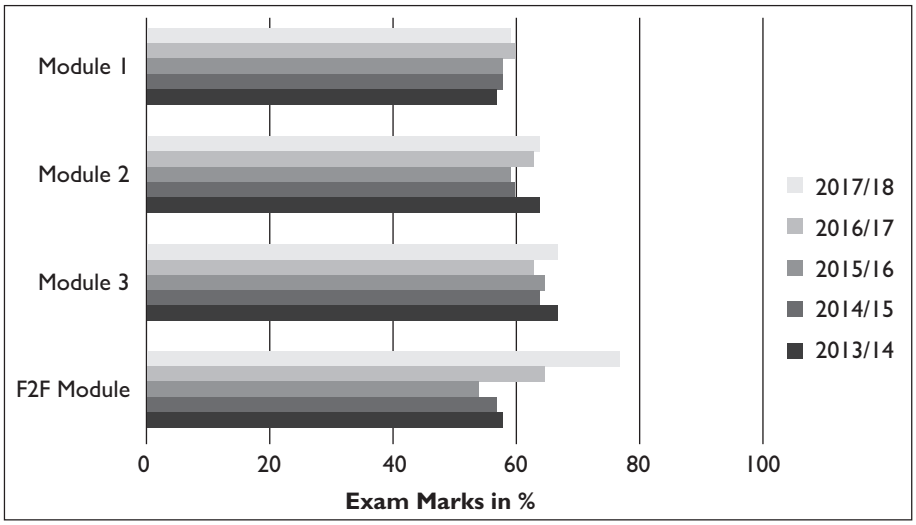
The average marks for this module over the five years analysed are depicted in Table 5.

TABLE 5: AVERAGE MARK FOR THE MASTERS' AUDITING AND PROFESSIONAL ETHICS MODULE

	2013/14	2014/15	2015/16	2016/17	2017/18
Average module mark	61%	59%	57%	66%	76%

When the module average exam marks using the F2F method are compared to all modules across the same semester, the results (Figure 8) demonstrate once more that adopting this method has had a significant improvement in exam marks across the five years analysed for this module. Moreover, the impact of the F2F method can be seen in Figure 8. For this cohort, the semester two results in 2017/18 were 7 per cent higher than those for semester one, which could suggest that this method of self-reflection and metacognition has benefited other modules taken in the same semester.

FIGURE 8: COMPARISON OF EXAM MARKS FOR THE MSC AUDITING AND PROFESSIONAL ETHICS MODULE WITH OTHER MODULES TAUGHT IN THE SAME SEMESTER



An analysis of MSc students' evaluations revealed, as with the UG and GD students, general levels of satisfaction with the introduction of the F2F method and an appreciation of the positive impact on their learning.

> 'Overall I found this new way of submitting homework to be extremely useful for both practising questions as well as a form of revision. Usually we would just be expected to complete homework, hand them in and then receive them back from our lecturer already marked. This quite often means we do not see where we went wrong …. Through marking ourselves we could see where we made our mistakes as well as learn what the examiner's mark scheme is looking for within our answers …. I feel

> more comfortable about my audit exam than any of the others mostly down to this style of homework.'
>
> 'In the beginning this process was a bit daunting. Truthfully, I failed to see the point behind it and viewed the entire process as a burden of sorts …. Not only is this process designed to encourage me to review and revise topics on a consistent basis … marking my own work and reflection also have a key role to play …. While I am by no means an expert I am confident this process has helped me become significantly better at this module.'
>
> 'The assessments highlighted my weakness for this style of work, pushed me to get better, and improving my weekly marks as a result …. It was very helpful to have the guidelines available once I had completed the work to ascertain where my failings were and in which ways to bolster my ability to tackle similar questions in the future.'

It is clear from the above comments that the students felt the introduction of the new method had helped them to see where they were going wrong when answering questions, improved their understanding of the subject and enhanced their ability to pass the exam in this module.

To summarise, for the weaker cohort of students, the GD students, exam marks improved only marginally by 3.6 per cent (4 marks); however, for the MSc and UG students with similar academic characteristics across cohorts, exam marks improved significantly by 20 per cent to 33 per cent (an increase of up to 19 marks). The main conclusions that can be drawn from this paper, as well as the potential for further research, are now outlined.

CONCLUSIONS

The obvious benefit ascertained from the analysis was the improvement in module marks across all cohorts once the F2F method was used for the full semester, rather than just half of the semester, as it was in the first year of the assessment for the UG and GD modules. Student engagement also improved in the modules, as evidenced from the positive reflections and module evaluations. Indeed, student engagement was helped by ensuring that attending a class was the only way to receive the marking matrix and lecturer(s) feedback. Furthermore, students did not receive a mark for their actual solution, but rather for the process of self-assessment and reflection (Cowan, 2006). Other significant benefits included the fact that while such an approach increased the lecturer's workload, it was not significant, as homework questions before the changes were introduced were marked regularly, whereas afterwards they were simply marked differently. In other words, by lecturers giving students the F2F, they are giving them 'a licence to identify confusions within the classroom structure' (Tanner, 2012, p. 117), and to ask themselves what it is they didn't understand. Further, by integrating reflection into the process, future learning should be enhanced by promoting metacognition, therefore going one step further than simply providing a rubric against which they assess either themselves or their peers (Norton, 2004). Accordingly, student learning was enhanced through self-guided reflection (Boud et al., 1985; Debowski, 2012).

One of the main disadvantages of introducing any new method of teaching and assessment is that success is often measured by student satisfaction (Mason Burdon and Abrahams, 2016). Studies have identified that effort may be afforded to trying to promote better use of skills as well as the development of new skills; however, if students do not engage fully in the activity, it is deemed useless. Past experience has found (Slack et al., 2014) that unless the students perceive some reward, engagement and satisfaction remain low. However, from an analysis of trends in accounting education literature from 1997 to 2016 by Apostolou, Dominey, Hassell and Rebele (2017), it was identified that the increased research on formative assessment, such as that undertaken by Curtis (2011) and Perera, Nguyen and Watty (2014), and further developed as student self-assessment by Taras (2015), shows that it does aid achievement of learning outcomes. This was certainly the case in the modules analysed in this paper, where it is clear from the reflections and module evaluations that students engaged with the process and were satisfied with the outcome.

It may be considered futile, and possibly risky, to change the assessment method for a module that gains exemptions from professional examinations, as both the subject matter and assessment methods are somewhat inflexible. However, the findings have demonstrated that by changing just a small element of assessment, there can be a significant impact on the remaining elements. The results showed that by altering only a 5 per cent assessment element to create a moderated self-assessment and reflection method, the impact on class test marks, exam results and student engagement have been significant. In allowing the students to attempt the question, get it wrong but learn from the process, they have gained in confidence and learnt valuable techniques to assist them with their future learning, such as exam technique, self-reflection and resilience. Therefore, students have been given the freedom to fail and there has been a notable improvement in their grades and an improvement in their learning and teaching experiences. From the qualitative data, students also appeared to engage more with their own personal development – a key skill for future learning according to the Association of Certified Chartered Accountants (2018). It should be noted that not all students were positive from the outset and some saw it as an additional burden of assessment; however, those who did had changed their minds by the end of the process, as evidenced by the final reflective comments.

Whilst other factors may have impacted upon the improvement of results, the authors believe that the introduction of a new assessment approach was a major contributing factor. Nonetheless, such an approach requires careful planning to ensure the process spans the full semester and to identify points where the lecturer wishes the student to use the F2F method. Completing a self-assessment and reflection every week might increase a student's workload too much; therefore five to six weeks in a semester were selected for the modules analysed in this paper. Moreover, the lecturer(s) maintained good communication with the students as to why the process was important for future learning. The students needed to be aware that the process was assessed rather than their answer(s). The new approach gave them the chance to attempt a question and even if their answer was incorrect, as long as it was their own work, and they answered all parts to the best of their ability and followed the process for marking and reflection, they developed a method

that will assist them in future exams and provide a strategy to help and guide their future learning. The lecturer(s) also needed guidance for both themselves and the students; for example, the template in Appendix I was used, which can be tailored to suit a particular subject and the metacognitive questions within the reflection can be improved upon, with Tanner (2012) offering some useful examples. Furthermore, the processs should be one of moderated self-assessment, as identified in Murdoch (2015). Lastly, the assessment should be used to embed the future skills the lecturer, future employer and accountancy profession would like to see developed in the students. It should be viewed as a natural part of the process and not as something additional to attaining the correct answer; therefore, it should be seen as something that is normal for the students' prospective careers/professional paths.

There are some limitations with this paper. For example, the student cohorts and their module performance were only compared over two consecutive years, 2016/17 and 2017/18. Accounting student cohorts are not homogenous, and there are many determinants which impact on how they perform individually and collectively (Koh, 2014). To determine if the impact on student performance is consistent, further years and other cohorts would need to be studied. Additionally, to ascertain the impact of the promotion of student metacognition on future learning, studies would need to be undertaken to examine performance in future professional exams. Moreover, it would be interesting for future studies to identify how it is possible to utilise technology and digitise the process to make it even more efficient and develop digital literacy skills at the same time. Finally, the assessment method used could be adopted for many modules, as it provides lecturers with the opportunity to build desirable skills and attributes into the assessment process, thus enabling a constructive alignment (Biggs and Tang, 2011) and encouraging learning that is directly related to students' future prospects and careers. Future studies could therefore involve more disciplines to review if the impact is the same for other fields of study. The benefits for future learning in these other areas could be researched to assess what impact, if any, the F2F process had on related strategies.

APPENDIX I: MARKING TEMPLATE FOR LECTURER USE

Marking Criteria	Week					TOTAL
	2	4	6	10	12	
Presentation of solution:						
Own work – *not copied or taken from suggested solution*						
All parts answered						
Consideration of requirement verbs						
Consideration of format, e.g. memo, letter						
Correct number of points made for the marks available						
Good quality critical analysis/discussion where relevant						
Table format utilised if necessary						
Neat work						
Marks available	*10*	*10*	*10*	*10*	*10*	*50*

(Continued)

APPENDIX 1: (*CONTINUED*)

Marking Criteria	Week					TOTAL
	2	4	6	10	12	
Quality of marking:						
Evidence of reading the suggested solution and marking scheme						
Marks have been given for individual points made						
Format marks awarded where necessary						
Marks totaled per question part						
Overall mark awarded						
Overall % awarded						
Marked in a different colour						
Marks available	*10*	*10*	*10*	*10*	*10*	*50*
Quality of reflection:						
Own work – *not copied*						
At least 300 words						
Performance appropriately critiqued						
Noted what was done well as well as what could be improved						
Conclusion of what you personally have to do to improve marks in audit questions for the next submission and for the class test/exam						
Review of whether work is improving week by week						
Neat work						
Marks available	*30*	*30*	*30*	*30*	*30*	*150*
TOTAL MARKS AVAILABLE	50	50	50	50	50	250

REFERENCES

Association of Certified Chartered Accountants (2018). *Learning for the Future*, London: ACCA.

Adachi, C., Hong-Meng Tai, J. and Dawson, P. (2018). Academics' Perceptions of the Benefits and Challenges of Self and Peer Assessment in Higher Education, *Assessment and Evaluation in Higher Education*, Vol. 43, No. 2, pp. 294–306.

Alshare, K. and Sewailem, M. (2018). A Gap Analysis of Business Students' Skills in the 21st Century: A Case Study of Qatar, *Academy of Educational Leadership Journal*, Vol. 22, No. 1, pp. 1–22.

Apostolou, B., Dominey, J., Hassell, J. and Rebele, J. (2017). Analysis of Trends in Accounting Education Literature (1997–2016), *Journal of Accounting Education*, Vol. 41, pp. 1–14.

Biggs, J. (2003). *Teaching for Quality Learning at University – What the Student Does*, second edition, Buckingham: SRHE/Open University Press.

Biggs, J. and Tang, C. (2011). *Teaching for Quality Learning at University*, fourth edition, Maidenhead: The Society for Research into Higher Education and Open University Press, McGraw-Hill.

Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M. and Rumble, M. (2013). Defining Twenty-First Century Skills, in P. Griffin, B. McGaw and E. Care (eds),

Assessment and Teaching of 21st Century Skills, Educational Assessment in an Information Age, London: Springer, pp. 17–66.
Boud, D. (1995). *Enhancing Learning through Self-Assessment*, London: Kogan Page.
Boud, D. and Associates (2010). *Assessment 2020: Seven Propositions for Assessment Reform in Higher Education*, Sydney, NSW: Australian Learning and Teaching Council.
Boud, D. and Falchikov, N. (2007). Developing Assessment for Informing Judgement, in D. Boud and N. Falchikov (eds), *Rethinking Assessment in Higher Education: Learning for the Longer Term*, London: Routledge, pp. 181–197.
Boud, D., Keogh, R. and Walker, D. (1985). *Reflection: Turning Experience into Learning*, London: Kogan Page.
Boud, D. and Molloy, E. (2012). Rethinking Models of Feedback for Learning: The Challenge of Design, *Assessment & Evaluation in Higher Education*, Vol. 38, No. 6, pp. 698–712.
Brown, G., Bull, J. and Pendlebury, M. (1997). *Assessing Student Learning in Higher Education*, London: Routledge.
Byrne, M. and Flood, B. (2011). Exploring the Conceptions of Learning of Accounting Students, *Accounting Education*, Vol. 13, Supplement 1, pp. 25–37.
Byrne, M., Flood, B. and Griffin, J. (2014). Measuring the Academic Self-Efficacy of First-Year Accounting Students, *Accounting Education*, Vol. 23, No. 5, pp. 407–423.
Chartered Accountants Ireland (2015). Examiners and Educators Meeting, 17 August, Dublin: Chartered Accountants Ireland.
Chartered Accountants Ireland (2019). Skills for Career Success Now and for the Future, paper given at the Influence Conference, 9–10 May, Kilkenny, Chartered Accountants Ireland.
Clarke, S., Arnab, S., Morini, L. and Heywood, L. (2018). Remixing Dungeons and Dragons: A Playful Approach to Student Self-Reflection, *Proceedings of the 12th European Conference on Game-Based Learning*, ECGBL Vol. 18, Oct, pp. 872–875, Reading: Academic Conferences International Limited.
Cole, D. and Tibby, M. (2013). *Defining and Developing Your Approach to Employability: A Framework for Higher Education Institutions*, York: The Higher Education Academy.
Cowan, J. (2006). *On Becoming an Innovative University Teacher: Reflection in Action*, second edition, Maidenhead: SRHE, Open University Press McGraw-Hill.
Curtis, S.M. (2011). Formative Assessment in Accounting Education and Some Initial Evidence on Its Use for Instructional Sequencing, *Journal of Accounting Education*, Vol. 29, No. 4, pp. 191–211.
Dacre Pool, L. and Sewell, P. (2007). The Key to Employability: Developing a Practical Model for Graduate Employability, *Education and Training*, Vol. 49, No. 4, pp. 277–289.
Debowski, S. (2012). *The New Academic*, Maidenhead: Open University Press McGraw-Hill.
Dewey, J. (1933). *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process*, Boston, MA: Heath.
Flavell, J. (1979). Metacognition and Monitoring: A New Area of Pyschological Inquiry, *American Psychologist*, Vol. 34, No. 10, pp. 906–911.
Flood, B. and Wilson, R. (2008). An Exploration of the Learning Approaches of Prospective Professional Accountants in Ireland, *Accounting Forum*, Volume 32, No. 3, pp. 225–239.
Frank, P. (1947). *Einstein: His Life and Times*, English translation edition, New York, NY: Alfred A. Knopf.
Gall, M.D., Gall, J.P., Jacobsen, D.R. and Bullock, T.L. (1990). *Tools for Learning: A Guide to Teaching Study Skills*, English language edition, Alexandria, VA: Association for Supervision and Curriculum Development.
Gijbels, D., Donche, V., Richardson, J. and Vermunt, J. (2014). *Learning Patterns in Higher Education: Dimensions and Research Perspectives*, first edition, New York, NY: Routledge.

Graduate Prospects Limited (2017). Job Profile Chartered Accountant, *Prospects*, available from: https://www.prospects.ac.uk/job-profiles/chartered-accountant, accessed 18 February 2018.

Hämäläinen, R., Kiili, C. and Smith, B.E. (2016). Orchestrating 21st Century Learning in Higher Education: A Perspective on Student Voice, *British Journal of Educational Technology*, Vol. 48, No. 5, pp. 1106–1118.

Hattie, J.A.C. (2009). *Visible Learning: A Synthesis of 800+ Meta-Analyses on Achievement,* London: Routledge.

Ingram, R. and Howard, T. (1998). The Association between Course Objectives and Grading Methods in Introductory Accounting Courses, *Issues in Accounting Education*, Vol. 13, No. 4, pp. 815–832.

Institute of Chartered Accountants in England and Wales (2018a). Employability Skills, *ICAEW*, available from: https://www.icaew.com/en/learning-and-development/job-essential-skills/employability-skills, accessed 18 February 2018.

Institute of Chartered Accountants in England and Wales (2018b). Resiliance and Adaptability, *ICAEW*, available from: https://www.icaew.com/en/learning-and-development/job-essential-skills/employability-skills/resilience-and-adaptability, accessed 11 April 2018.

JISC (2015). JISC Guide: Transforming Assessment and Feedback with Technology, *JISC*, 9 October, available from: https://www.jisc.ac.uk/full-guide/transforming-assessment-and-feedback, accessed 20 January 2018.

Jowkar, B., Kojuri, J., Kohoulat, N. and Hayat, A. (2014). Academic Resilience in Education: The Role of Achievement Goal Orientations, *Journal of Advances in Medical Education and Professionalism*, Vol. 2, No. 1, pp. 33–38.

Knight, P. and Yorke, M. (2004). *Learning, Curriculum and Employability in Higher Education,* London: Routledge Falmer.

Koh, H. (2014). Determinants of Students' Performance in Accounting Programmes, in R.M.S. Wilson (ed.), *The Routledge Companion to Accounting Education*, London: Routledge, pp. 449–469.

Madeline (2017). Metacognition (Flavell), *Learning Theories*, 6 April, available from: https://www.learning-theories.com/metacognition-flavell.html, accessed 1 April 2018.

Mason Burdon, W. and Abrahams, K. (2016). Simulation – Is It All Worth It? The Impact of Simulation from the Perspective of Accounting Students, conference paper presented at the 26th Audit and Assurance Conference organised by the Auditing Special Interest Group (ASIG), 5–6 May, Said Business School, University of Oxford.

Maxwell, J. (2000). *Failing Forward: Turning Your Mistakes into Stepping Stones for Success*, Nashville, TN: Thomas Nelson.

Miller, A. (2015). *Freedom to Fail: How Do I Foster Risk-Taking and Innovation in My Classroom?*, Alexandria, VA: ASCD Arias.

Miller, A., Irmie, B. and Cox, K. (2014). *Student Assessment in Higher Education: A Handbook for Assessing Performance*, second edition, New York, NY: Routledge.

Moon, J. (1999). *A Handbook of Reflective and Experiental Learning*, London: Routledge.

Murdoch, J. (2015). Using Self- and Peer Assessment at Honours Level: Bridging the Gap between Law School and the Workplace, *The Law Teacher*, Vol. 49, No. 1, pp. 73–91.

Ndoye, A. (2017). Peer/Self Assessment and Student Learning, *International Journal of Teaching and Learning in Higher Education*, Vol. 29, No. 2, pp. 255–269.

Norton, L. (2004). Using Assessment Criteria as Learning Criteria: A Case Study in Psychology, *Assessment and Evaluation in Higher Education*, Vol. 29, No. 6, pp. 687–702.

Perera, L., Nguyen, H. and Watty, K. (2014). Formative Feedback through Summative Tutorial-Based Assessments: The Relationship to Student Performance, DOI: 10.1080/09639284.2014.947093, *Accounting Education*, Vol. 23, No. 5, pp. 424–442.

Perkins, D. and Salomon, G. (1989). Are Cognitive Skills Context-Bound?, *Educational Researcher*, Vol. 18, No. 1, pp. 16–25.

PwC (2017). The Skills We Look For, *PwC*, available from: https://www.pwc.co.uk/careers/student-jobs/apply/the-skills-we-look-for.html, accessed 18 February 2018.

Root Kustritz, M. and Clarkson, C.E. (2017). Use of Examination Wrappers to Direct Student Self-Assessment of Examination Preparation: A Pilot Study, *Journal of Veterinary Medical Education*, Vol. 44, No. 2, pp. 338–342.

Rowntree, D. (1987). *Assessing Students: How Shall We Know Them?*, London: Harper and Row.

Schraw, G., Crippen, K. and Hartley, K. (2006). Promoting Self-Regulation in Science Education: Metacognition as Part of a Broader Perspective on Learning, *Research in Science Education*, Vol. 36, Nos. 1–2, pp. 111–139.

Scott, C. (2015). *The Futures of Learning 3: What Kind of Pedagogies for the 21st Century?*, Paris: UNESCO Education Research and Foresight.

Slack, R., Loughran, J. and Abrahams, K. (2014). Corporate Associate Partnerships: Practitioners' Involvement in the Delivery of an Auditing Course Based on a Case-Study: A Teaching Resource, *Accounting Education: An International Journal*, Vol. 23, No. 3, pp. 262–276.

Tan, K. (2007). Conceptions of Self-Assessment: What Is Needed for Long-Term Learning?, in D. Boud and N. Falchikov (eds), *Rethinking Assessment in Higher Education: Learning for the Longer Term*, London: Routledge, pp. 114–127.

Tanner, K.D. (2012). Promoting Student Metacognition, *CBE – Life Sciences Education*, Vol. 11, Summer, pp. 113–120.

Taras, M. (2015). Innovations in Student-Centred Assessment, Higher Education Academy Innovative Pedagogies Series, 5 November, available from: https://www.advance-he.ac.uk/knowledge-hub/innovations-student-centred-assessment, accessed 15 August 2016.

Thomas, G., Martin, D. and Pleasants, K. (2011). Using Self- and Peer-Assessment to Enhance Students' Future-Learning in Higher Education, *Journal of University Teaching & Learning Practice*, Vol. 8, No. 1, Article 5.

Ulster University (2017). Assessment Handbook, *University of Ulster*, available from: http://www.ulster.ac.uk/academicoffice/assessmenthandbook.html, accessed 15 September 2017.

Wang, M., Haertel, G. and and Walberg, H.J. (1998). *Educational Resilience*, Publication Series No. 11, Washington, DC: Office of Educational Research and Improvement (ED).

Wanner, T. and Palmer, E. (2018). Formative Self- and Peer Assessment for Improved Student Learning: The Crucial Factors of Design, Teacher Participation and Feedback, *Assessment and Evaluation in Higher Education*, Vol. 43, No. 7, pp. 1032–1047.

Zohar, A. and David, A.B. (2009). Paving a Clear Path in a Thick Forest: A Conceptual Analysis of a Metacognitive Component, *Metacognition Learning*, Vol. 4, No. 3, pp. 177–195.